

**SYSTEM AND METHOD FOR ESTIMATING
SEPARATION DISTANCE BETWEEN IMPULSE RADIOS
USING IMPULSE SIGNAL AMPLITUDE**

Abstract

An impulse radio system estimates a separation distance between an impulse radio transmitter and an impulse radio receiver. The system includes an impulse transmitter that transmits an impulse signal having an ultra-wideband frequency characteristic. An impulse receiver spaced from the transmitter receives the transmitted impulse signal and measures a signal strength of the received impulse signal. The receiver estimates the separation distance based on the measured signal strength. The receiver classifies a signal propagational/multipath environment using the received impulse signal, and then selects a radio propagation path loss model corresponding to a classified multipath environment. The receiver translates the measured signal strength to a separation distance based on the selected radio propagation path loss model.

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